ITONAMA INTONATION AND PHONEMES

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1. Introduction. Itonama, spoken in northeastern Bolivia, is listed as independent by McQuown.[1] The Itonamas are located in three main villages: Magdalena, San Ramón, and Huacaraje. They also live in smaller villages scattered throughout the same area as these main villages in Iténez province. The data on which this paper is based were recorded during a residence of fourteen months in Nueva Calama, Magdalena, and Huacaraje, under the auspices of the Summer Institute of Linguistics.

2. *Intonation contours.* The Phonemically relevant levels of organization in Itonama are (from largest to smallest) the contour, the word, the syllable, and the phoneme.

Contours in Itonama consist of one or more words, the maximum being six words. Each word in the contour has its own intonation, and the last word is followed by a terminal feature. On the last word of the contour there is a potentially greater elaboration of intonation than on nonfinal words; high-low and low-low intonation patterns, for example, are extremely rare in any but contour-final position. There are at least two contrastive types of contour termination: ordinary (#) and drawled (:). The ordinary termination is phonetically a decrescendo in loudness accompanied by a slight drawling of the final syllable: this termination serves merely to distinguish one contour from the next. In the drawled termination the last two syllables of the contour are lengthened perceptibly. In the first example the termination is ordinary, and in the second it is drawled: nuwano?ke yut?uwa?na u?waba# *first they make corn drink*, mipadara slahwahna: *my word is sure.*

3. *Words*. The word in Itonama consists of two or more syllables. Its boundaries are marked by a complex of penultimate stress and plus juncture. In addition there is an intonation pattern on each word; this pattern is a sequence of two or more contrastive pitches that are not innate to the word as a morphophonemic unit, but rather represent morphemes of a separate system whose main function seems to be that of tying words together in sequence.[2]

Any Itonama word (we use "word" as a phonological term, equivalent to "foot" or "stress group" in other discussions; most phonological words are also grammatical words) consists of two to seven syllables, the next to last of which is stressed. The point where two words abut is marked by a junctural feature more or less like English plus juncture. There are a few Spanish loans that have antepenultimate stress in the speech of some speakers of Itonama. For these speakers it would be necessary to recognize the stress peak of each word as phonemically relevant; however, for the most speakers the stress can simply be considered part of a complex word boundary signal. Some examples (using vertical tick to indicate where stress occurs and space to indicate where juncture occurs; in later examples only space need be written) are: sikikı̋'wa?na *I* *know*, sise?'wa?ne *I see*, sima'kïwe nu'?udu u?'waba *I'm giving you this corn drink*. An example of antepenultimate stress on a Spanish loan is: es'piritu *spirit*.

The pitch patterns of words can easily and adequately be represented in terms of four phonetic levels. In this paper phonetic levels are numbered 1 (low) through 4 (high), and the pitch of each syllable is represented by a superscript numeral following the syllable: čï^{1}yas^{3}ke^{2} *enter*. Upon examination of the phonetic pitch sequences that occur on words, however, it appears that there is never more than a three-way pitch contrast at any point in the word. For example, taking the last two syllables of words in both nonfinal and final positions in contours, we note the following sequences (in which the first numeral represents the pitch of the penultimate stressed syllable and the second numeral represents the pitch of the final prejunctural syllable): 4-1, 3-1, 1-1; 4-2, 3-2, 2-2; 4-3, 3-3. Here before a final phonetic pitch one there is contrast between four, two, and one; before a final phonetic pitch two there is contrast between four, three, and two; before phonetic pitch three there is contrast between four and three. No phonetic rise in pitch from the stressed syllable to the final syllable has ever been observed. When the same pitch sequences are rearranged so as to show contrasts on the final syllable, after a phonetic pitch one on the penultimate stressed syllable only pitch one occurs; after a phonetic pitch two on the stressed syllable only a phonetic pitch two occurs; after a phonetic pitch three on the stressed syllable there is contrast between pitches three, two and one; after a phonetic pitch four on the stressed syllable there is contrast between pitches three, two and one. Likewise on the syllables that precede the stressed syllable the maximum number of contrasts that has been observed at any point is three. This then leaves us to suggest that for Itonama the intonational system is a three-level one with the levels designated as *high* (´), *mid* (- or unmarked), and *low* (\`). The allophonics of the pitch system is, however, strange in that phonetically level sequences at the end of a word are phonemic rises, while phonetic drops of one pitch level are phonemically sequences of the same pitch. The allophonic distribution is as follows: phonemic *high* pitch is phonetically level four on stressed syllables, level three elsewhere: màtḯté, ma^{1}tï^{4}te^3 *appeared*; phonemic *mid* pitch is phonetic level three on stressed syllables and level two elsewhere: sīhnēhnā, sih^{2}neh^{3}na^2 *saying*; phonemic *low* pitch is phonetic level two on stressed syllables that precede a phonemic *mid* pitch, and phonetic level one on stressed syllables that precede a phonemic *low* pitch and on unstressed syllables: dādàče, da^{2}da^{2}če^2 *all right*.

To restate the intonational system starting with the phonetic pitches: pitch four occurs only on stressed syllables and is always phonemically *high*; phonetic level three is phonemic *mid* pitch on stressed syllables and phonemic *high* pitch elsewhere; phonetic level two is phonemic *low* pitch on stressed syllables that precede a phonemic *mid* and and phonemic *mid* pitch elsewhere; phonetic pitch one is phonemic *low* pitch everywhere.

If phonetic sequences 2-1 or 4-4 were observed, or if any pitch rises from stressed to final syllables were observed, this would force interpretation of the intonational system as a four-level pitch system, because the possible sequences of three phonemic levels would be inadequate to account for the pitch sequences than observed. An examination of the text material available on tape, however, has not turned up any of these pitch sequences, so that it is possible that this unorthodox grouping of phonetic pitch levels into phonemic pitches actually holds.

4. *Syllables*. The syllable patterns of Itonama show that all syllables contain a single vowel which may be preceded, followed, or preceded

and followed by a consonant. Consonants that follow a vowel within a syllable, however, are limited to /s/, /h/, and /?/, and the consonant-final syllable is always followed by a consonant-initial syllable. Consonant-final syllables, furthermore, never occur word finally. Some word-initial syllables begin with a sequence of /s/ plus the following consonants: /p b t d $t^?$ t^y č $č^?$ k $k^?$ m n/. The initial /s/ is morphemically a contracted form of person possessive prefixes as-, is-, us-, but its occurrence requires recognition of a unique syllable pattern.

Syllable types then serve indirectly as word boundary markers in that syllables with final consonants never occur word finally and syllables with consonant clusters occur only word initially. Intervocalic consonants always go with the following syllable.

5. Phonemes. The possible fillers of vowel slots in Itonama syllables are six, distinguished by tongue height and tongue position. The vowel phonemes are high front /i/, low front /e/, high central /ï/, low central /a/, high back /u/, low back /o/.

i ï u
e a o

The back vowels are rounded, the others unrounded. /e/ has a mid open front unrounded variant [ɛ] which occurs only word medially before /h/, /?/, and all stops; [e] occurs in all other places. Almost all possible sequences of vowels occur between syllables.

Consonants in Itonama are distinguished at the bilabial, alveolar, postalveolar, and velar points of articulation. They form an asymmetrical system of glottalized, voiceless, voiced and palatalized stops, nasals, a silibant, a lateral, a flap, laryngeals, and semivowels. Consonants are: voiceless stops /p t č k/ (/č/ fluctuates phonetically between [ts] and [tš]), voiced stops /b d/, glottalized stops /$t^?$ $\check{c}^?$ $k^?$/ (/$\check{c}^?$/ fluctuates phonetically between [$ts^?$] and [$t\check{s}^?$]), palatalized stop /t^y/, nasals /m n/, sibilant /s/, lateral /l/, flap /r/, semivowels /w y/, laryngeals /? h/.

	bilabial	alveolar	postalveolar	velar
stops				
voiceless	p	t	č	k
voiced	b	d		
glottalized		$t^?$	$\check{c}^?$	$k^?$
palatalized		t^y		
nasals	m	n		
sibilant		s		
lateral		l		
flap		r		
laryngeals				h
				?
semivowels	w	y		

Because of the lack of symmetry in the consonant system it would be equally acceptable to regard the glottalized stops and palatalized stops as clusters t + ?, č + ?, k + ?, t + y. Inasmuch as /$t^{?}$ $\check{c}^{?}$ $k^{?}$ t^{y}/ occur as second member of syllable-initial clusters with /s/, an additional syllable pattern would need to be recognized for this analysis. The system it leaves is, however, still asymmetrical in that there is no voiced postalveolar or velar stop, and clusters of /p/ with glottal stop or of /p č k/ with /y/ do not occur.

6. *Text*. The following text excerpt illustrates the occurrence of phonologic units in speech.

sihnehna es'piritu# (*says* *spirit*) "*the* *spirit* *said*"; dadàče surè: (*all-right* *child*) "*All* *right*, *child*"; sìčahana?tewè: (*I-will-take-care-of-you*) "*I'll* *take* *care* *of* *you*"; ka?niku# (*your-house*) "*your* *house*"; wànačïhï?ï?kò: (*concern-no*) "*don't* *be* *concerned*"; o?ni sìnawï?newe# (*you* *I-respect-you*) "*I* *respect* *you*"; mìkahanahe (*greater-part*) "*the* *greater* *part*"; nu?ča?u (*this*) "*of* *this*"; kowétes: (*long-ago*) "*long* *ago*"; sìkikïwa?na (*I-know*) "*I know*"; k?ičàka (*because*) "*because*"; tiyayaya (*boy*) "*from* *a* *boy*"; sìse?wa?nè: (*I-see*) "*I* *see*"; mipadara (*my word*) "*my* *word*"; slahwáhnà:

(*certain*) "*is* *certain*"; dadàče (*all-right*) "*all right*"; ho?naha (*now*) "*now*"; sosòhna (*all*) "*that's all*"; sepupačuwè: (*I'm-telling-you*) "*I'm* *telling you*".

FOOTNOTES

[1] Norman A. McQuown, "The Indigenous Languages of Latin America," American Anthropologist, 57:3 (June, 1955), 501-570.

[2] An intonational system at the word level has also been reported by Eunice V. Pike, for Mazahua of Mexico. Eunice V. Pike, "Tonemic-Intonemic Correlation in Mazahua (Otomi)," International Journal of American Linguistics, 17:1 (January, 1951), 37-41.

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